Index to Feature Articles—1966

First section of index consists of month-by-month listing of feature articles and contains Reference Sections (Reference), The Piping/Plumbing Engineer (P/P) and Data Sheets (Data). Second section indexes articles by subject and author, and uses key words in an article. Contents of Air Conditioning, Heating and Ventilating are indexed monthly by Industrial Arts Index and microfilmed by University Microfilms, Div. Xerox Corp., 313 North First St., Ann Arbor, Mich.

JANUARY

Check List for Safe Installation of Domestic Water Heaters (P/P), pp. 66-7
New Standard for Water Hammer Arresters, (P/P), pp. 68-71
District Heating Consumer Connections in USSR, R.M.E. Diamant, pp. 72-4
Cost Estimating Building Service Systems-8: Production K Factors, K. B. Edmunds, pp. 75-6
Specification and Design Seminar: Interior Design-The Simplest Case, M. A. Ramsey, pp. 77-8
Applications and Installations, pp. 83-5: Spacecraft Gas Heating and Cooling Plant; Package Sewage Plant Within Building Serves Florida High-Rise Apartments; Fans in Limited Space Supply Pavilion of Spain Air Curtain Sizing Gas Piping, V. J. Pantuso (Data), pp. 99-102
Equipment Scheduling: Water Chillers, Cooling Towers, H. B. Swygert, (Data), pp. 101-2

FEBRUARY

Water Conservation: Air Cooling For the Absorption Machine, A. H. Fox, pp. 53-5; Every Little Bit Helps, J. Stone, p. 56; Salvaged Steam and Cooling Water Can Flush Toilets, M. Schwartz, pp. 57-8; An Integrated Mechanical/Evaporative Cooling System, M. Meckler, pp. 59-62; How the ADC Test Code Works, G. M. Otto, pp. 63-6
Providing for Sub-Sewer Sewage, E. Ceparano (P/P), pp. 67-72
Air Flow and Conditioning: Chapter 1. Boundary Layers, W. F. Stoecker, pp. 73-84
Equipment Scheduling, Multi-Zone Units, Fan Coil Units, H. B. Swygert (Data), pp. 85-8
The Case for Leasing, A. Kalman, pp. 89-90
District Heating Conference, R.M.E. Diamant, p. 117

MARCH

Variable Air Volume Systems (Reference): The Case for VAV, pp. 56-50; VAV Terminal Units, pp. 60-4; Application Theory, pp. 65-8; Air Distribution, pp. 69-72; Automatic Controls, pp. 72-6; Appendix, pp. 77-8; S. Daryanani, W. McKay, N. Shataloff, H. Straub
District Heating: Hot Water Metering, R. M. E. Diamant, pp. 79-80
Cost Estimating Building Service Systems 9: Classification of Accounts, K. B. Edmunds, pp. 86-8
Specification and Design Seminar: Interior Control—The Next Step, M. A. Ramsey, pp. 89-91
Waste and Vent Stack Sizing (P/P), J. E. McGinness, Jr., pp. 81-5
Equipment Scheduling: Boilers, Pumps, Chillers (Data), H. B. Swygert, pp. 103-6
Applications and Installations, pp. 92-4: In-Line Pump Cuts Installation Cost of Roof-Mounted Air Conditioning System; Door Heaters Keep Beer from Freezing in Warehouse Shipping Area; Abrasives Manufacturing Demands Strict Control of Temperature and Humidity; Minnesota Town Fights Gas with Gas to Abolish Sewage Odors; Glass Fiber Ducts Specified for High Velocity Duct System

APRIL

2-, 3-, 4-Pipe Air Conditioning Systems (Reference): The Need to Heat and Cool Simultaneously, pp. 58-61; Induction Unit Systems, pp. 62-80; R. D. Blum
Simplified Method For Sizing Gravity Roof Ventilation (Data), J. D. Constance, pp. 81-2
Standby Generators Needed — They Need Not Stand By, M. D. Ringler, pp. 83-6
The ASSE Resolution on Floor-Type Plumbing Fixtures (P/P), A. J. Ferrara, pp. 88-9
Economic Selection of Water Storage Tanks (P/P), P. W. Sherwood, pp. 89-90
Applications and Installations: pp. 92-3; Hospital Modernized Without Interruption to Service, J. Conroy; Steel Foil Radiant Heating Element Cuts Installation Costs at New Hampshire School
Cost Estimating Building Service Systems—10: Earthwork, K. B. Edmunds, pp. 96-8

MAY

Integrated Ceiling Systems (Reference): Order out of Chaos, pp. 72-3; Conventional Ceilings, pp. 74-6; Integration of Lighting, Air Supply and Acoustics, pp. 76-9; Ventilating Ceilings, pp. 80-4; Radiant Heating-Cooling Ceilings, pp. 84-95; Combination Systems, pp. 95-101; The Future of Integrated Ceiling Systems, pp. 101-2.—I. C. Park, Jr. and H. F. Schwenk, Jacobson and Co., New York, N.Y.
The Facts on LP-Gas, J. Hartzell, pp. 110-13
Specification and Design Seminar: Interior Space—Variable Load, M. A. Ramsey, pp. 114-16
Air Flow and Conditioning: Chapter 2. Flow in Ducts, W. F. Stoecker, pp. 117-22
Cost Estimating Building Service Systems—11: Earthwork (cont.) K. B. Edmunds, pp. 123-4
Applications and Installations, pp. 126-7; Water Chiller Design Halves Electrical Installation Costs at Film Processing Lab; College Modernizes Central Heating Plant, Effects Saving in Fuel and Labor
Guide to Insulation Specification for Piping (P/P), H. O. Mulkey, pp. 135-8

JUNE

Internal-Source Heat Pump Systems (Reference): Design for Commercial Buildings, pp. 51-69; Capital and Operating Cost Analysis, pp. 70-82. B. S. Szabo
Expansion Joints—Who Makes What, N. Martianoff, pp. 85-92
Cost Estimating Building Service Systems—12: Earthwork, Excavation Calculations, K. B. Edmunds, pp. 93-4
Don't Rely on Natural Draft! Vent Boilers Mechanically, L. P. Froehlich, pp. 95-6
Corrosion of Copper in Potable Water Service (P/P), G. B. Hatch, pp. 97-101
Design Copper Drainage Piping Around Properties of Copper (P/P), H. E. Voegeli, pp. 101-3
Applications and Installations, pp. 105-6: Glass Fiber Duct Eases Central Air Conditioning Installations; Gas Provides Climate Control at Remodeled Houston Hotel

JULY

Demand Meaningful Sound Trap Ratings, V. V. Cerami, pp. 53-4
Electric Heating (Reference): In-Space Electric Heating, pp. 56-8; Operating Costs, pp. 59-67; System Flexibility, pp. 68-70; Control of Electric Heating, pp. 71-74; S. Daryanani, P. Greiner, T. Burt
Eliminate The Surge Tank in Tankless Systems (P/P), R. C. Cook, pp. 79-80
Design and Installation of Suction Tanks (P/P), A. Steele, pp. 80-81
Simplifying Piping Flexibility Problems, C. A. Lee, pp. 82-4
Lighting as a Heat Source (Data), pp. 85-7
School Hot Water Requirements (Data), p. 88
Avoid Costly Infiltration, M. A. Ramsey, pp. 89-92
Applications and Installations, pp. 93-5: Pharmaceutical Manufacturer Standardizes on Lightwall Piping to Maintain Product Quality; Bank Automates Climate Control System, Gets More Reliable Performance; Quick Fuel Conversion Foils Blizzard Freeze-Up
Inside NDHA, J. J. Buffone, p. 96

AUGUST

Report From the Golden Gate Engineers (Reference): San Francisco—The Air Conditioned City, D. M. Hanson, pp. 53-5; Air Conditioning and Acoustics, W. H. Schneider, pp. 56-9; Campus Heating System, R. M. Kennedy and R. W. Phillips, pp. 60-3; Boiler Size Selection, A. L. Buonaccorsi, pp. 64-8; Design Problems in the Bank of California, F. U. Weir, pp. 69-72; Trouble-Shooting Mechanical Systems, J. E. Murray, pp. 73-6; Design Building to Overcome 2-Pipe Limitations, K. Guttman and Z. Cumali, pp. 77-81; New Tools for To-

morrow's Schools, G. L. Gendler and R. E. Bass, pp. 82-6
Applications and Installations, pp. 87-90: 18-Story New York Office Building Conditioned by Air-Cooled System, M. Caretsky; Putting Equipment on Building Top Saves Digging Sub-Basement Factory Air Conditioning For Precision Manufacturing, H. D. Savage, pp. 91-5
A New Technique for Pipe Sizing (P/P), L. Guss, pp. 115-8

SEPTEMBER

Cooling Degree-Days and Energy Consumption, H. C. S. Thom, pp. 53-4
Control of Duct Generated Noise (Reference), V. V. Cerami, and E. S. Bishop, pp. 55-64
P. E. License Requirements, J. D. Constance, pp. 65-8
Air Flow and Conditioning: Chapter 3. Changes in Area and Direction, W. F. Stoecker, pp. 69-78
Applications and Installations, pp. 79-82: Mechanical Problems in a Contemporary Planetarium; Clean Room Techniques Used in Hospital Operating Room
Plastic Bathroom Highlights Canadian World Exhibition (P/P), pp. 83-4
A New Technique for Pipe Sizing (P/P), L. Guss, pp. 85-92
Specification and Design Seminar: On-Off Control of Air Conditioning Systems, M. A. Ramsey, pp. 93-5

OCTOBER

Boiler Safety and Control: Preventing Boiler Explosions, L. H. Coykendall, pp. 55-8; Automating Controls, O. W. Durrant, pp. 58-9; Let's Revisit the Traditional Auditorium Bypass System, M. Munk, pp. 60-4; Hermetic Centrifugals As Heat Pumps, W. Landman, pp. 65-74
Air Flow and Conditioning: Chapter 4. Centrifugal Fans, W. F. Stoecker, pp. 75-82
Applications and Installations, pp. 83-6: Maintain Laboratory Design Conditions Despite Fluctuating Internal Loads, S. A. Littmann; Motel Gas Air Conditioning Achieves Low Operating Costs; Specify Pre-Insulated Glass Fiber Duct for Faster Installation and Reduced Noise
A New Technique for Pipe Sizing (P/P), L. Guss, pp. 87-94
Specification and Design Seminar: On-Off Control with Intermittent Refrigeration, M. A. Ramsey, pp. 95-6

NOVEMBER

A Report from Herman Blum, Consulting Engineers: Computers for Building Management, H. Blum, pp. 50-3; From Open Doors to Outdoor Air Conditioning, A. E. Tyler, pp. 54-6; Analyses for School Air Conditioning, G. Meredeith, pp. 57-60; A New Public Utility is Born, A. H. Smith, pp. 61-3; Specifications: Fair and Fast, A. H. Smith, pp. 64-6; One Main Place—Flexible and Economical, M. Schlessinger, pp. 67-71; Heat Transfer from Ceiling Plenums, T. A. Henderson, pp. 72-6; Engineer in the Field, J. B. Dalzell, p. 77; Twenty-One Years Old, pp. 78-80
Applications and Installations, pp. 81-4: Use of Asbestos-Cement Duct Solves Heating and Drainage Problems at Swimming Pool; Infra-Red Heaters Effect Economies at Freight Warehouse Terminal; Airport Control Towers Air Conditioned for Better Visibility; Air Conditioned Courtyard Cools Hotel Rooms
Specifications and Design Seminar: On-Off Control Using Less Coil, M. A. Ramsey, p. 85
Ask $1,000,000 for Water Research Usage, L. Guss (P/P), pp. 92-6
A New Technique for Pipe Sizing, L. Guss (P/P), pp. 97-100

DECEMBER

Application of Hydraulic Acoustic Filters, V. V. Cerami, pp. 41-5
Preventing Fires in Kitchen Ventilating Ducts, F. M. Donnelly, pp. 46-50
Design of Mechanical Systems for Animal Research Facilities, Gupta, H. C., pp. 51-4
Parking Fields and Capillary Water, A. Koral (P/P), pp. 55-6
Specification and Design Seminar: On-Off Face Control Can Fulfill Some Requirements, M. A. Ramsey, pp. 57-8
Applications and Installations, pp. 63-4: Conceal Heating and Cooling Equipment on Roof to Preserve Church Beauty; Fire Dampers Protect Cape Kennedy Launch Facility; Rooftop Installation Provides Economical Heating and Cooling; School Air Conditioning has Nine Steps of Capacity Modulation; Pipeline Replaces Itself
Data Sheet—Equipment Scheduling: Absorption Chillers, Unit Coolers, Condensing Units, Unit Heaters, Converters, Refrigerant Pipe, H. B. Swygert (Data), pp. 65-8

SUBJECT AND AUTHOR INDEX

Abrasives manufacturing, control of temperature and humidity, Mar, 93
Absorption chillers, scheduling for, Dec, 65
Absorption machine, air cooling for, Feb, 53
Acoustical ratings, sound trap, July, 53
Acoustical treatment of ductwork, Sept, 55
Acoustical filters, hydraulic, Dec, 41
Acoustics and air conditioning, Aug, 56
Acoustics, lighting and air supply, integrated, May, 76
ADC test code, Feb, 63
Air conditioned courtyard, Nov, 84
Air conditioning and acoustics, Aug, 56
Air conditioning systems, on-off control, Sept, 93
Air conditioning systems, 2-, 3- and 4-pipe, Apr, 57
Air cooled system for office building, Aug, 87
Air cooling for the absorption machine, Feb, 53
Air curtain entrances, Jan, 85
Air diffusion equipment test code, Feb, 63
Air distribution, variable air volume, Mar, 69
Air Flow and Conditioning, See under Stoecker, W. F.
Air flow measurement, Feb, 64
Airport control towers, air conditioning of, Nov, 83
Animal research facilities, design for, Dec, 51
Apartment sewage plant, Jan, 85
Application theory, variable air volume, Mar, 65
Arresters, water hammer, standards for, Jan, 68
Asbestos-cement duct, use at swimming pool, Nov, 81
ASSE Hospital Plumbing Standards Committee, Nov, 92
ASSE plumbing fixture resolution, Apr, 88
Auditorium bypass system, Oct, 60
Automated approach to furnace-boiler safety, Oct, 58
Automatic controls, variable air volume, Mar, 72

Bank air conditioning system, July, 94
Bank of California, designing system for, Aug, 69
Bass, R.E., *New Tools for Tomorrow's Schools,* Aug, 82
Bataan Memorial Methodist Hospital, Sept, 81
Bathroom, pre-fab, glass fiber, Sept, 83
Bearing manufacturing, air conditioning for, Aug, 91
Bishop, E.S., *Control of Duct Generated Noise,* Sept, 55
Blendermann, L., *Standards for Water Hammer Arresters,* Jan, 68
Blum, H., *Computers for Building Management,* Nov, 50
Blum, R., *2-, 3-, 4-pipe Air Conditioning Systems,* Apr, 57
Boiler safety and control, Oct, 55
Boiler size selection, Aug, 64
Boilers, scheduling for, Mar, 103
Boiler venting, mechanical, June, 95
Boundary layers, air flow and conditioning, Feb, 73
Brehm, H.P., *Mechanical Problems in a Contemporary Planetarium,* Sept, 79
Building management, computers for, Nov, 50
Buonaccorsi, A.L., *Boiler Size Selection,* Aug, 64
Burt, T., *Electric Heating,* July, 55
Bypass system, auditorium, Oct, 60

Campus heating system, Aug, 60
Capillary water, Dec, 55
Caretsky, M., *18-Story New York Office Building Conditioned by Air-Cooled System,* Aug, 87
Ceiling plenums, heat transfer from, Nov, 72
Ceilings, radiant heating-cooling, May, 84
Ceilings, ventilating, May, 80
Ceiling systems, May, 71
Central air conditioning, glass fiber duct for, June, 105
Central heating and cooling plant, Jan, 83
Central heating plant, Clarkson College, May, 127
Ceparano, E., *Providing for Sub-Sewer Sewage,* Feb, 67
Cerami, V.V., *Demand Meaningful Sound Trap Ratings,* July 53; *Control of Duct Generated Noise,* Sept, 55 *Application of Hydraulic Acoustic Filters,* Dec, 41
Chilled water, district, for air conditioning, Nov, 61
Chillers, scheduling for, Mar, 106

Classification of accounts, cost estimating, Mar, 86
Clean room techniques in hospital operating room, Sept, 81
Climate control system, bank, July, 94
Commercial buildings, heat pumps for, June, 51
Computer analysis of 2-pipe system, Aug, 77
Computer center (Automated Procedures for Engineering Consultants), Sept, 12
Condensing unit, scheduling for, Dec, 65
Conroy, J., *Hospital Modernizes without Interruption to Service,* Apr, 92
Constance, J.D., *Simplified Method for Sizing Gravity Ventilation,* Apr, 81; *P. E. License Requirements,* Sept, 65
Constant volume regulator, Mar, 60
Consumer connections in USSR, district heating, Jan, 72
Control of duct generated noise, Sept, 55
Control of electric heating, July, 71
Control of interior air conditioning systems, Mar, 89
Control (on-off) of air conditioning systems, Sept, 93; Oct, 95; Nov, 85; Dec, 57
Conversion, fuel, boiler plant, July, 95
Converters, scheduling for, Dec, 65
Cook, R.C., *Eliminate the Surge Tank in Tankless Pumping Systems,* July, 79
Cooling degree-days, Sept, 53
Cooling towers, scheduling for, Jan, 102
Copper corrosion, water service, June, 97
Copper drainage piping, June, 101
Corrosion of copper, water service, June, 97
Cost data, office building, variable air volume, Mar, 77
Cost estimating, Jan, 75; Mar, 86; Apr, 96; May, 123; June, 93
Coykendall, L.H., *Boiler Safety and Control; Preventing Boiler Explosions,* Oct, 55
Cumali, Z.O., *Design Building to Overcome 2-Pipe Limitations,* Aug, 77

Dalzell, J.B., *Engineer in the Field,* Nov, 77
Daryanani, S., *Variable Air Volume Air Conditioning Systems,* Mar, 55; *Electric Heating,* July, 55
DataCenter centralized control of heating and cooling plant, Jan, 83
Deaerators, boiler, Mar, 94
Degree-days, cooling, Sept, 53
Designing heating and cooling system for Bank of California, Aug, 69
Diamant, R.M.E., *District Heating: Consumer Connections in USSR,* Jan, 72; *District Heating: Hot Water Metering,* Mar, 79
Direct expansion coil, Dec, 57
District chilled water, Nov, 61
District heating, Jan, 72
District heating and cooling, NASA center, Jan, 83
District heating conference, report on, Feb, 117
District heating, hot water metering, Mar, 79
Domestic hot water requirements, school, July, 88
Donnelly, F.M., *Preventing Fires in Kitchen Ventilating Ducts,* Dec, 46
Door heaters, Mar, 92
Drainage piping, copper, June, 101
Drainage, swimming pool, Nov. 81
Drainage systems, storm water, Dec, 55
Drape and glass selection, bank building, Aug, 71
Dual duct units, variable air volume, Mar, 63
Dual service prime movers, Apr, 83
Duct, glass fiber, central air conditioning, June, 105
Duct noise control, Sept, 55
Ductwork, insulation specs for, May, 135
Durrant, O.W., *An Automated Approach to Furnace-Boiler Safety,* Oct, 58

Earthwork, cost estimating for, Apr, 96; May, 123; June, 93
Edmunds, K.B., *Cost Estimating Building Service Systems*: Jan, 75; Mar, 86; May, 123; June, 93
Electric heating, July, 55
Emergency power generators, Apr, 83
Equipment scheduling, see under Swygert, H.B.
Estimating, building service systems, Jan, 75; Mar, 86; Apr, 96; May, 123; June, 93
Evaporative cooling system, Feb, 59
Evaporative hot water meters, Mar, 79
Excavation, estimating for, June, 93
Expansion joints, June, 85

Face control, direct expansion coil, Dec, 57
Factory air conditioning, Aug, 91
Fan-coil units, scheduling for, Feb, 87
Ferrara, A.J., *The ASSE Resolution on Floor Type Plumbing Fixtures,* Apr, 88
Field engineering, Nov, 77
Fire fighting, water shortage for, Apr, 89
Fire prevention, kitchen ducts, Dec, 46
Fire protection, estimating for, Mar, 88
Flexibility, piping, July, 82
Floor-type plumbing fixtures, Apr, 88
Flush toilets with salvaged steam, Feb, 57
Four-pipe induction unit system, Apr, 69
Fox, A.H., *Water Conservation, Air Cooling for the Absorption Machine,* Feb, 53
Froehlich, L.P., *Vent Boilers Mechanically,* June, 95
Furnace explosions, cause and prevention, Oct, 55

Gas air conditioning system, June, 106
Gas air conditioning system, motel, Oct, 85
Gas piping, sizing for, Jan, 99
Gendler, G.L., *Golden Gate Engineers,* Aug, 52; *New Tools for Tomorrow's Schools,* Aug, 82
Generators, Standby, Apr, 83
Glass fiber duct, June, 105
Glass fiber ducts in high velocity system, Mar, 94
Golden Gate engineers, Aug, 51
Gravity feed systems, Jan, 73
Gravity ventilation, sizing for, Apr, 81
Grease filters, Dec, 46
Greiner, P.C., *Electric Heating,* July, 55
Gupta, H.C., *Design of Mechanical Systems for Animal Research Facilities,* Dec, 51
Guss, L., *A New Technique for Pipe Sizing,* Aug, 115; Sept, 85; Oct, 87; Nov, 97; *Ask $1,000,000 for Water Usage Research,* Nov, 92
Guttman, K., *Design Building to Overcome 2-Pipe Limitations,* Aug, 77

Hanson, D.M., *San Francisco—The Air Conditioned City,* Aug, 53
Hartzell, J., *The Facts of LP Gas,* May, 110
Hatch, G. B., *Corrosion of Copper in Potable Water Service,* June, 97
Heating and drainage piping, Nov, 81
Heating, Electric, July, 55
Heating system, campus, Aug, 60
Heat pumps, hermetic centrifugals as, Oct, 65
Heat pump systems, June, 51
Heat source, lighting as, July, 85
Heat transfer from ceiling plenums, Nov, 72
Henderson, T.A., *Heat Transfer from Ceiling Plenums,* Nov, 72
Herman Blum, Consulting Engineers, Nov, 49
Hermetic centrifugals as heat pumps, Oct, 65
High pressure induction unit, Apr, 62
High temperature water heating system, Aug, 60
High velocity duct system, Mar, 94
Hospital, clean room techniques used in, Sept, 81
Hospital modernization, air conditioning for, Apr, 92
Hotel courtyard, air conditioned, Nov, 84
Hot water metering, district heating, Mar, 79
Hydraulic acoustic filters, Dec, 41

Induction unit systems, Mar, 58
Illumination, electric, heat source, July, 85
Immersion heaters, Mar, 94
Induction unit systems, 2-, 3-, 4-pipe air conditioning systems, Apr, 57, 62
Infiltration, outside air, July, 89
Infra-red heating, warehouse terminal, Nov, 82
In-line centrifugal pump for air conditioning system, Mar, 92
Insulation specification for piping and ductwork, May, 135
Integrated ceiling design, May, 71
Integrated lighting, air supply and acoustics, May, 76
Integrated mechanical/evaporative cooling, Feb, 59
Interior air conditioning design, Jan, 66
Interior space design—variable load, May, 114
Internal source heat pump systems, June, 51

Jacobson & Co., *Integrated Ceiling Design,* May, 71

Kalman, A., *The Case for Leasing,* Feb, 89
Kathabar air conditioning equipment, Apr, 92
Kennedy, R.M., *Campus Heating System,* Aug, 60
Kitchen ventilating ducts, preventing fires in, Dec, 46
Koral, A., *Parking Fields and Capillary Water,* Dec, 55

Laboratory design conditions, Oct, 83
Landman, W., *Hermetic Centrifugals as Heat Pumps,* Oct, 65
Leasing air conditioning, heating equipment, Feb, 89
Lee, C.A., *Simplifying Piping Flexibility Problems,* July, 82
Lennox *Direct Multizone System,* Aug, 83
Lifting devices, sewage, Feb, 70
Lighting, air supply and acoustics, integrated, May, 76
Lighting as a heat source, July, 85
Lightwall piping, July, 93
Liquefied petroleum gas, May, 110
Littmann, S.A., *Maintain Laboratory Design Conditions Despite Fluctuating Internal Loads,* Oct, 83
Loads fluctuate in lab design, Oct, 83

Main Place, Dallas, Texas, Nov, 67
Martianoff, N., *Expansion Joints—Who Makes What*, June, 85
McDonnell Planetarium, Sept, 79
McGinness, J. E. Jr., *Waste and Vent Stack Sizing*, Mar, 81
McKay, W., *Variable Air Volume Air Conditioning Systems*, Mar, 55
Mechanical draft, boiler, June, 95
Mechanical/evaporative cooling system, Feb, 59
Mechanical hot water meters, Mar, 79
Mechanical systems design for animal research facilities, Dec, 51
Mechanical systems, trouble-shooting, Aug, 73
Meckler, M., *Water Conservation: Integrated Mechanical/Evaporative Cooling System*, Feb, 59
Meredeith, G., *Analyses for School Air Conditioning*, Nov, 57
Mulkey, H.O., *Guide to Insulation Specification for Piping and Ductwork*, May, 135
Multi-zone units, scheduling for, Feb, 85
Munk, M., *Traditional Auditorium Bypass System Revisited*, Oct, 60
Murray, J.E., *Trouble-Shooting Mechanical Systems*, Aug, 73

NASA Manned Spacecraft Center, Jan, 83
National District Heating Association. review of proceedings, July, 96
Natural draft, June, 95
Noise and vibration control, piping systems, Dec, 00
Noise control, air conditioning system, Sept, 55
Noise control, duct generated, Sept, 55
Noise control, mechanical equipment Aug, 56

Odors, Sewage, elimination of, Mar, 93
Office building has air cooled system, Aug, 87
On-off control using less coil, Nov, 85
On-off control with intermittent refrigeration, Oct, 95
On-off face control, Dec, 57
Operating costs, electric heat, July, 59
Otto, G., *How the ADC Test Code Works*, Feb, 63
Outdoor air conditioning, Nov, 54

Panels, electric, radiant heating, Apr, 93
Pantuso, V. J., *Sizing Gas Piping*, Jan, 99
Park, I.C. Jr., *Integrated Ceiling Design*, May 71
Parking lot drainage system, Dec, 55
Peak load demand, water storage, Apr, 89
P. E. license requirements, Sept, 65
Penthouse equipment location, Aug, 90
Perimeter air conditioning, variable air volume, Mar, 59
Perimeter heating and cooling, Apr, 58
Phillips, R.W., *Campus Heating System*, Aug, 60
Pipe sizing for plumbing fixtures, Aug, 115; Sept, 85; Oct, 87; Nov, 97
Piping, drainage, piping, June, 101
Piping flexibility, July, 82
Piping, insulation specs for, May, 135
Piping noise, control of, Dec, 41
Piping, pharmaceutical manufacturing, July, 93
Piping practice, yard, Apr, 96
Planetarium, heating and cooling system for, Sept, 79
Plastic one-piece bathroom, Sept, 83
Plumbing fixtures, pipe sizing for, Aug, 115; Sept, 85; Oct, 87; Nov, 97
Pre-fab bathroom at EXPO 67, Sept, 83
Pre-insulated glass fiber duct, Oct, 85
Production K Factors (cost estimating), Jan, 75
Public utility: chilled water, Nov, 61
Pump doubles as water turbine, Oct, 86
Pumps, scheduling for, Mar, 105
Radiant heating-cooling ceilings, May, 84
Radiant heating system, electric, Apr, 93
Ramsey, M.A., *Specification and Design Seminar: Interior Design—The Simplest Case*, Jan, 77; *Interior Control—The Next Step*, Mar, 89; *Interior Space—Variable Load*, May, 114; *Avoid Costly Infiltration*, July, 89; *On-Off Control of Air Conditioning Systems*, Sept, 93; *On-Off Control with Intermittent Refrigeration*, Oct, 95; *On-Off Control Using Less Coil*, Nov, 85; *On-Off Face Control*, Dec, 57
Recirculating hot water systems, June, 97
Refrigerant pipe, sizing for, Dec, 65
Refrigeration, intermittent, Oct, 95
Research facility design, Dec, 51
Ringler, M.D., *Standby Generators Needed—They Need Not Stand By*, Apr, 83
Roof-mounted system, Mar, 92

Safety, boiler, Oct, 55, 58
Salvaged steam and cooling water, Feb, 57
San Francisco—the air conditioned city, Aug, 53
Savage, H.D., *Factory Air Conditioning for Precision Manufacturing*, Aug, 91
Scheduling, equipment, see under Swygert, H.B.
Schlessinger, M., *One Main Place—Flexible and Economical*, Nov, 67
Schneider, W.H., *Air Conditioning and Acoustics*, Aug, 56
School air conditioning, analyses for, Nov, 57
School air conditioning, (SCSD program), Aug, 82
School Construction Systems Development program, Aug, 82
School hot water requirements, July, 88
Schwartz, M., *Water Conservation: Salvaged steam and Cooling Water Can Flush Toilets*, Feb, 57
Schwenk, H.F., *Integrated Ceiling Design*, May, 71
Selecting boiler sizes, Aug, 64
Sewage odors, elimination of, Mar, 93
Sewage plant, package, Jan, 85
Sewage, sub-sewer, Feb, 67
Shataloff, N., *Variable Air Volume Air Conditioning Systems*, Mar, 55
Sherwood, P.W., *Economic Selection of Water Storage Tanks*, Apr, 89
Single duct units, variable air volume, Mar, 62
Sizing gas piping for apartment houses, office buildings, Jan, 99
Sizing gravity ventilation, Apr, 81
Smith, A.H., *A New Public Utility is Born*, Nov, 61; *Specifications: Fair and Fast*, Nov, 64
Solar heat gain, Aug, 71
Sound rating, Feb, 64
Sound trap ratings, July, 53
Spanish Pavilion air curtains, Jan, 85
Specification and Design Seminar, see under Ramsey, M.A.
Specification writing, Nov, 64
Stack sizing, waste and vent, Mar, 81
Standby power generators, Apr, 83
Steele, A., *Design and Insulation of Suction Tanks in Plumbing Systems*, July, 80
Stoecker, W.F., *Air Flow and Conditioning: Chap. 1, Boundary Layers*, Feb, 73; *Chap. 2, Flow in Ducts*, May, 117; *Chap. 3, Changes in Area and Direction*, Sept, 69; *Chap. 4, Centrifugal Fans*, Oct, 75
Stone, J., *Water Conservation: Every Little Bit Helps*, Feb, 56
Straub, H., *Variable Air Volume Air Conditioning Systems*, Mar, 55
Sub-Sewer Sewage, providing for, Feb, 67
Suction tanks, plumbing systems, July, 80
Surge tanks in plumbing systems, July, 79
Swimming pool heating and drainage, Nov, 81
Swygert, H.B., *Equipment Scheduling: Water Chillers, Cooling Towers*, Jan, 101; *Multizone Units, Fan Coil Units*, Feb, 85; *Boilers, Pumps, Air Cooled Chillers*, Mar, 103; *Converters, Unit heaters, Condensing Units, Absorption Chillers, Unit Coolers, Refrigerant Pipe*, Dec, 65
Szabo, B.S., *Internal Source Heat Pump Systems*, June, 51

Tankless pumping systems, July, 79
Temperature and humidity control, abrasives manufacturing, Mar, 93
Terminal units, variable air volume, Mar, 60
Thermoelectric hot water meters, Mar, 79
Thom, H.C.S., *Cooling Degree-Days and Energy Consumption*, Sept, 53
Three-pipe induction unit system, Apr, 70
Training programs, engineering, May, 15
Trouble-shooting mechanical systems, Aug, 73
Two-pipe design, overcoming limitations, Aug, 77
Two-pipe induction unit system, Apr, 65
2-, 3-, 4-pipe air conditioning systems, Apr, 57
Tyler, A.E., *From Open Doors to Outdoor Air Conditioning*, Nov, 54

Unit coolers, scheduling for, Dec, 65
Unit heaters, scheduling for, Dec. 65

Variable air volume air conditioning systems, Mar, 55
Variable load control for interior space, May, 114
Ventilating ceilings, May, 80
Ventilation, gravity, sizing for, Apr, 81
Venting boilers mechanically, June, 95
Vent stack sizing, Mar, 81
Voegeli, H.E., *Design Copper Drainage Piping Around Properties of Copper*, June, 101

Wall-hung plumbing fixtures, Apr, 88
Warehouse air curtain entrances, Mar, 92
Warehouse heating, Nov, 82
Warwick Hotel, Houston, Tex., remodeling of, June, 106
Waste and vent stack sizing, Mar, 81
Water chiller installed at film processing lab, May, 126
Water chillers as heat pumps, Oct, 65
Water chillers, scheduling for, Jan, 101
Water conservation, Feb, 53
Water hammer arresters, Jan, 68
Water heater explosion prevention, Jan, 66
Water service, copper corrosion, June, 97
Water storage tank selection, Apr, 89
Water supply piping, sizing for, Aug, 115; Sept, 85; Oct, 87; Nov, 97
Water turbine as centrifugal pump, Oct, 86
Water usage research, Nov, 92
Weir, F.U., *Design Problems in the Bank of California*, Aug, 69
Well water for water conservation, Feb, 56